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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,824	02/08/2002	Liang Li	112025-0489	2349
24267	7590	03/07/2006	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			HARPER, KEVIN C	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,824

Applicant(s)

LI ET AL.

Examiner

Kevin C. Harper

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11, 14-17, 20, 21 and 23 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8, 12, 13, 18, 19, 22 and 24-27 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 28-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed December 19, 2005 have been fully considered but they are not persuasive. Applicant argued that Li does not convert matching rules of a super class into a single hierarchical arrangement of lookup tables and associated equivalence sets including a final equivalence set. However, in Li matching rules are determined for a super class (figs. 5-9A and 11; col. 8, lines 10-18; col. 17, lines 11-34). A hierarchical arrangement of lookup tables (item 302, 306 and 310) and associated equivalence sets (item 305; note P1-P5 show relevance to rules 1-5 -- col. 18, lines 20-22 where P4 is related to rules 4 and 5).
2. The indicated allowability of claims 25 and 27 is withdrawn in view of Li.

Claim Objections

3. Claims 28-33 are objected to because in independent claims 28, 30 and 33, "generating the lookup table in response" should be --generating a lookup table in response--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 7-8, 12-13, 18, 22 and 24-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (US 6,529,508).

4. Regarding claims 1, 18, 24-25 and 27, Li discloses a method for generating lookup tables and a final equivalence set for use in classifying a network packet (figs. 10-11) with a policy that specifies classes (figs. 4 and 8-9A; col. 6, lines 42-44), each class containing match statements being a matching rule (col. 6, lines 44-48). The method comprises the steps of generating a super class that contains all of the matching rules associated with the classes specified by the policy (col. 16, line 65 through col. 17 line 13; note: each rule listed for multiple classes), and converting the matching rules of the super class into a single hierarchical arrangement of lookup tables (fig. 10, items 302, 305 and 310) and equivalence sets (fig. 10, sets P1-P5), where the levels include a first level and a final level having an association with the final equivalence set (note: rule sets P4 and P5 are in the final level). Further regarding claim 18 and 24-25 and 27, the method is implemented by an apparatus (fig. 1, item 24) comprising a processor and memory (col. 19, lines 56-65) and having computer readable media containing computer executable instructions for performing the method. Further regarding claims 25 and 27, the computer readable medium is capable of containing instructions for execution in a processor of the claimed method (MPEP 2173.05(g)).

5. Regarding claim 2, class information is saved (col. 8, lines 26-30).

6. Regarding claim 7, the final equivalence set is associated with classes (fig. 10, P4 and P5; col. 17, lines 1-11).

7. Regarding claim 8, the lookup tables and final equivalence set are transferred to a network device that performs packet classification (fig. 1, item 24; col. 3, lines 19-20 and 24-26).

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8. Regarding claims 12, 22 and 26, Li discloses a method for generating lookup tables and a final equivalence set for use in classifying a network packet (figs. 10-11) with a policy that specifies classes (figs. 4 and 8-9A; col. 6, lines 42-44), each class containing match statements being a matching rule (col. 6, lines 44-48). The method comprises the steps of generating a super class that contains all of the matching rules associated with the classes specified by the policy (col. 16, line 65 through col. 17 line 10; note: each rule listed for multiple classes), saving class information (col. 8, lines 26-30), converting the matching rules of the super class into a single hierarchical arrangement of lookup tables (fig. 10, items 302, 305 and 310) and equivalence sets (fig. 10, sets P1-P5), where the levels include a first level and a final level having an association with the final equivalence set (note: rule sets P4 and P5 are in the final level), applying a network packet to the lookup tables to generate an outcome index (fig 10; col. 10, lines 39-45), applying the outcome index to the final equivalence set to generate a bitmap value (fig. 10, item 305) and associating the bitmap value with saved class information to determine one or more classes associated with the network packet (col. 17, lines 1-13). Further regarding claims 22 and 26, the method is implemented by an apparatus (fig. 1, item 24) comprising a processor means and memory means (col. 19, lines 56-65) and having computer readable media containing computer executable instructions for performing the method.
9. Regarding claim 13, the network packet is divided into sections (col. 18, lines 22-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,529,508) in view of Kloth et al. (US 6,643,260).

10. Li discloses a lookup table, but does not disclose that the lookup table is stored in a CAM. Kloth discloses that a lookup (routing) table stored in a CAM (Figure 4A, item 82). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a lookup table stored in a CAM in the invention of Li in order to provide a fast access for a flexibly-assigned classification determination of a packet.

Allowable Subject Matter

11. Claims 3-6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 9-11, 14-17, 20-21 and 23 are allowed.

13. Claims 28-33 would be allowable if the above claim objection is overcome.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 571-272-3166. The examiner can normally be reached weekdays from 11:00 AM to 7:00 PM ET.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached at 571-272-3179. The centralized fax number for the Patent Office is 571-273-8300. For non-official communications, the examiner's personal fax number is 571-273-3166 and the examiner's e-mail address is kevin.harper@uspto.gov.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications associated with a customer number is available through Private PAIR only. For more information about the PAIR system, see portal.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin C. Harper

March 5, 2006